



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) C. Quinn Hilberg	Project Number J0911
Project Title Fire Frenzy	
Objectives/Goals From my experiment I am trying to prove which object (styrofoam, vinyl material, cotton material, newspaper, or cardboard), has more harmful elements, (ash and smoke) to the atmosphere when it is burnt. I chose to do this experiment because I am worried about the hole in the ozone. I have read that smoke is not good for the atmosphere. I wondered why our town lets people burn their trash, tree limbs, and other stuff if it is so bad. That made me wonder of all the stuff we burn what is the worst? I hoped to find out that one object is worst than another and I thought that it might be the vinyl material because it has plastic in it.	
Abstract From my experiment I am trying to prove which object (styrofoam, vinyl material, cotton material, newspaper, or cardboard), has more harmful elements, (ash and smoke) to the atmosphere when it is burnt. I chose to do this experiment because I am worried about the hole in the ozone. I have read that smoke is not good for the atmosphere. I wondered why our town lets people burn their trash, tree limbs, and other stuff if it is so bad. That made me wonder of all the stuff we burn what is the worst? I hoped to find out that one object is worst than another and I thought that it might be the vinyl material because it has plastic in it.	
Methods/Materials Foil, burn can, cardboard box, vinyl material, styrofoam, 2 by 4, matches, newspaper, trash bag, cotton fabric, glass cover, plastic cups (5), rubber bands, saran wrap, stop watch.	
Results Cotton material took 12 minutes to burn, it smelled really bad, produced white smoke and I collected 1/4 cup of ashes. Vinyl material took 25 minutes to burn, smelled worse than the cotton, grey to black smoke was produced, and I collected 1/32 cup of ashes. Newspaper took 7 minutes to burn, no smell, white smoke, and 1/2 cup of ashes was collected. Styrofoam took 32 minutes to burn, black soot covered the can and the glass, high amounts of black smoke poured out of the can, smelled the worst, 1/16 cup of ashes was collected. Cardboard took 10 minutes to burn, it did not smell, white smoke, and 1/2 cup of ashes was collected.	
Conclusions/Discussion Before I conducted the experiment I thought that vinyl material would be the winner because it has plastic in it, and it was heavy. Once I started the actual burning I realized that styrofoam must also have some type of plastic in it. When I spoke to the fire chief, I found out that styrofoam is a type of plastic and it is dangerous to breathe. He said styrofoam is very toxic and can kill people if they breathe in a lot of the smoke. Luckily for me I did not breathe in any smoke. That also explains why there was hardly any ash from the vinyl material or the styrofoam. Since it was plastic it almost completely burnt up and went into the atmosphere. The Styrofoam had the most smoke the blackest smoke, and second to last for the least amount of ash. That tells me that almost all of the Styrofoam went into the atmosphere.	
Summary Statement Burning different objects to determine which object has the most harmful effects to the atmosphere.	
Help Received My Mom helped me type the report and was there when I burnt all of of the objects.	